

Orthodontics

1. IMPRINT		
Academic Year	2022/2023	
Faculty	Faculty of Dental Medicine	
Field of study	English Dentistry Division	
Main scientific discipline (in accord with appendix to the Regulation of Minister of Science and Higher education from 26th of July 2019)	Medical science	
Study Profile (general academic / practical)	General academic	
Level of studies (1st level /2nd level/ uniform MSc)	1 st level	
Form of studies	Stationary	
Type of module / course (obligatory / non-compulsory)	Obligatory	
Form of verification of learning outcomes (exam / completion)	Completion	
Educational Unit / Educational Units (and address / addresses of unit / units)	Department of Orthodontics, Medical University of Warsaw, Binieckiego 6, 02-097 Warsaw, Poland, tel.: 22 116 64 54, e-mail: ortodoncja@wum.edu.pl	

Head of Educational Unit / Heads of Educational Units	Prof. dr hab. n. med. Małgorzata Zadurska
Course coordinator (title, First Name, Last Name, contact)	Dr hab. n. med. Ewa Czochrowska; email: ewa.czochrowska@wum.edu.pl
Person responsible for syllabus (First name, Last Name and contact for the person to whom any objections concerning syllabus should be reported)	Dr hab. n. med. Ewa Czochrowska; email: ewa.czochrowska@wum.edu.pl
Teachers	Dr hab. n. med. Ewa Czochrowska; ewa.czochrowska@wum.edu.pl Dr n. med. Katarzyna Mańka-Malara; katarzyna.manka-malara@wum.edu.pl Lek. dent. Paulina Tokarska; paulina.m.tokarska@gmail.com Lek. dent. Anna Wasiewicz; anna.wasiewicz@wum.edu.pl Lek. dent. Katarzyna Regulska; regulska@gmail.com

2. BASIC INFORMATION				
4 th year, 7 th and 8 th semester		Number of ECTS credits	6	
FORMS OF CLASSES Contacting hours with academic teacher		ECTS credits calculation		
				re (L) 5 (5 as e- 0,17 learning)
Seminar (S)		0,67		
Exercise (E)		3,47		
e-learning (e-L)		0.17		
Practical classes (PC)				
Work placement (WP)				
Unassisted student's work				
Preparation for classes and completions		2		
	4 th year, 7 th and 8 th semester FORMS OF CLASSES academic teacher	4 th year, 7 th and 8 th semester FORMS OF CLASSES Academic teacher S (5 as e-learning) 20 104 5	4 th year, 7 th and 8 th semester FORMS OF CLASSES academic teacher Number of hours ECTS credits calculat 5 (5 as e-learning) 20 0, 104 3, 5 0.	

3.	COURSE OBJECTIVES
C1	To acquire the knowledge in the field of malocclusion diagnostics
C2	To acquire the knowledge in the field of diagnostic methods in orthodontics
C3	To acquire the knowledge in the field of etiology and epidemiology of abnormalities of the masticatory organ

C4	To acquire the knowledge in the field of orthodontic prophylaxis
C5	To acquire the knowledge in the field of orthodontic medical documentation

4. STANDARDS OF LEARNING — DETAILED DESCRIPTION OF EFFECTS OF LEARNING (concerns fields of study regulated by the Regulation of Minister of Science and Higher Education from 26 of July 2019; does not apply to other fields of study)

Code and number of effects of learning in accordance with standards of learning

(in accordance with appendix to the Regulation of Minister of Science and Higher education from 26th of July 2019)

Effects in time

Knowledge – Graduate* knows and understands:

C.W22.	basic clinical procedures of orthodontic prophylaxis
F.W1.	occlusal norms at different stages of individual development and deviations from the norms
F.W2.	principles of prophylactic and therapeutic procedures in diseases of the masticatory system at various stages of development
F.W4.	symptoms, course and management in selected diseases of the oral cavity, head and neck, considering age groups
F.W12.	causes of complications of the stomatognathic system diseases and the principles of management in case of such complications
F.W14.	methods of rehabilitation of the masticatory apparatus
F.W15.	methods for reducing and relieving pain and reducing anxiety and stress
F.W17.	principles of construction and application of removable and fixed orthodontic appliances
F.W18.	principles of radiological diagnostics
F.W19.	pathomechanism of the influence of oral cavity diseases on general health
F.W22.	principles of management in the case of diseases of the tissues of the masticatory organ and dental, jaw and facial injuries
F.W23.	the specificity of dental care for a patient burdened with a general disease and the principles of cooperation with the physician in charge of the underlying disease

Skills- Graduate* is able to:

C.U16.	plan the basic stages of prophylactic care for patients in the area of orthodontic needs
F.U1.	conduct a medical interview with the patient or his family

F.U2.	conduct a dental physical examination of the patient
F.U3.	explain to the patient the essence of his ailments, establish the treatment method confirmed by the patient's informed consent and the prognosis
F.U4.	provide the patient or his family with information about an unfavorable prognosis
F.U6.	interpret the results of additional tests and consultations
F.U7.	determine indications and contraindications for a specific dental procedure
F.U9.	proceed in the event of general and local complications during and after dental procedures
F.U11.	keep current patient records, prescribe referrals for tests or for a specialized dental and medical treatment
F.U12.	formulate research problems in the field of dentistry
F.U13.	present selected medical problems in oral or written form, in a manner adequate to the level of recipients
F.U15.	establish treatment in diseases of the stomatognathic system tissues
F.U18.	diagnose, differentiate and classify malocclusions
F.U19.	provide help in the event of damage to the orthodontic appliance
F.U20.	make simple orthodontic appliances
F.U21.	conduct prophylactic treatment to prevent malocclusion in the period of primary and early mixed dentition
F.U23.	describe dental and panoramic radiographs
G.U15.	provide the patient with the necessary information in the field of oral health promotion
G.U20.	work with the principles of ergonomic work organization
G.U26.	keep medical records

^{*} In appendix to the Regulation of Minister of Science and Higher Education from 26th of July 2019 "graduate", not student is mentioned.

5. ADDITIONAL EFFECTS OF LEARNING (non-compulsory)			
Number of effects of learning	Effects of learning i time		
Knowledge – Graduate knows and understands:			
K1	-		
Skills- Graduate is able to:			
S1	-		
Social Competencies – Graduate is ready for:			

SC2

orm of class	Class contents	Effects of Learning
Lectures	L1 – Lecture 1 – Diagnosis of malocclusion and dental abnormalities. Definition of malocclusion according to WHO, orthodontic norm, Angle's classification, skeletal classification, Andrew's 6 keys of normal occlusion, Polish diagnostics according to Orlik-Grzybowska, diagnostics according to Ackerman and Proffit, dental abnormalities regarding tooth number, morphology, position and time of eruption.	F.W1., F.W19., F.U6., F.U18.
	L2 – Lecture 2 - Elements of orthodontics in dental practice. Interdisciplinary treatment - cooperation of an orthodontist with other specialists. Orthodontic norm in deciduous and permanent dentition, transition of dentition, functional examination of masticatory system, indications for treatment in deciduous, mixed and permanent dentition, orthodontic prophylaxis, cooperation of an orthodontist with other specialists.	F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W19., F.W22., F.W2 F.U15., F.U18., F.U21.
	L3 – Lecture 3 - The possibilities of contemporary orthodontic treatment Directions of development related to new diagnostic methods, directions of development related to treatment planning, directions of development related to new methods of treatment, limitations and contraindications of orthodontic treatment, complications of orthodontic treatment. * Lectures will be available on the e-learning platform during the whole winter semester.	F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W19., F.W22., F.W23., F.U7., F.U9., F.U15., F.U18., F.U21.
	S1 – Seminar 1 - Diagnosis of malocclusions in the fronto-orbital plane Characteristic of malocclusions in the fronto-orbital plane, distoclusions – distoclusions and retrogenia, mesioclusions – mesioclusions and progenia, differentiation between skeletal and functional malocclusions – functional tests.	F.W1., F.U7., F.U18.
Seminars	S2 – Seminar 2 – Diagnosis of malocclusions in the sagittal and Frankfurt planes Characteristic of malocclusions in the sagittal plane, crossbites and scissor bites, laterogenia – functional and morphological – differentiation, functional test for malocclusions in the sagittal plane, characteristic of malocclusions in the Frankfurt plane, open and deep bites.	F.W1., F.U7., F.U18.
	S3 – Seminar 3 – Diagnostics of dental abnormalities Tooth crowding, tooth spacing and diastema, classification of dental abnormalities, description of abnormalities in tooth morphology, tooth number, tooth position and time of tooth eruption.	F.W1., F.W18., F.U6., F.U7., F.U18., F.U23.
	S4 – Seminar 4 - Etiopathogenesis of malocclusion. Clinical pathology of the temporomandibular joint. Aetiology and epidemiology of malocclusion, dysfunctions and parafunctions.	F.W1., F.W2., F.W4., F.W12, F.W14., F.W1 F.W18., F.W19., F.W22., F.W23., F.U1.

Aetiology of the temporomandibular joint disorders, principles of the orthodontic and orthopaedic treatment, the most common TMJ pathologies: clinical cases.

F.U2., F.U3., F.U4., F.U6., F.U7., F.U12., F.U15., F.U18., G.U15.

S5 – Orthodontic prophylaxis. Treatment of malocclusions in preschool children.

Principles of orthodontic prophylaxis in infants, toddlers and preschool children, principles of orthodontic prophylaxis in school children, etiopathogenesis of malocclusion and orthodontic treatment in preschool children, types of orthodontic appliances and indications for treatment.

C.W33., F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W19., F.U3., F.U7., F.U15., F.U18., F.U19., F.U20., F.U21., G.U15.

S6 – Seminar 6 – Removable orthodontic appliances.

Classification of removable appliances, indications and contraindications for removable appliances, mechanical removable appliances – Schwartz's plate, main and additional components, modifications, functional removable appliances – activator, Stockfish, Klammt, Frankel, Balters, Bimler and twinblock appliances, main and additional components, modifications of functional appliances, mechanical-functional appliances, construction bite – principles of performing.

F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20., F.U21.

S7 – Seminar 7– Orthodontic appliances – fixed and extraoral appliances.

Types of fixed appliances, main components of fixed thin- and thick-wire appliances, thick-wire appliances used for maxillary expansion — Hyrax, Haas, NiTi expander, other thick-wire maxillary appliances: Pendex/Pendulum, transpalatal bar, Nance plate, thick-wire mandibular appliances: lip bumper, lingual arch. Types of extraoral appliances, face-mask: types, indications and contraindication for the application, force exerted by elastics, recommendations for the patient, head-gear: types, indications and contraindications for the application, force exerted by elastics, recommendations for the patient.

F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20., F.U21.

 ${\sf S8-Seminar\,8-Principles}\ of\ treatment\ of\ malocclusion\ in\ school\ children.$

General guidelines of indications and contraindications for treatment in school children, principles of treatment of malocclusions in the fronto-orbital plane in school children - distoclusions and mesioclusions, principles of treatment of malocclusions in sagittal plane in school children - crossbites and scissor bites, laterogenia, principles of the treatment of malocclusions in Frankfort plane in school children - open bites and deep bites.

C.W33., F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20., F.U21.

 $\mbox{S9}-\mbox{Seminar}$ 9 – Orthodontic indications for tooth extraction in deciduous and permanent dentition.

Consequences of extractions in the deciduous and permanent dentition, indications and contraindications for extractions of deciduous and permanent teeth.

C.W33., F.W1., F.W2., F.W4., F.W12., F.W14., F.W15., F.W17., F.W18., F.W22., C.U16., F.U1., F.U4., F.U6., F.U7., F.U15., F.U18., F.U21.

S10 – Seminar 10 – Adult treatment

General indications for orthodontic treatment in adults, contraindications for orthodontic treatment in adults, principles of adult treatment, orthodontic treatment of patients with periodontitis.

F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W19., F.W22., F.W23. F.U3., F.U6., F.U7., F.U9., F.U15., F.U18., G.U15.

	Exercises – 1 st semester	
	C1. Introduction to orthodontic diagnosis. Knowing normal occlusion in deciduous dentition. General information, Angle's classification, canine classification, Baum's classification, skeletal classification, overjet and overbite, Andrew's 6 keys of normal occlusion, facial symmetry and proportion, analysis of profile, biometric field, diagnosis of malocclusion according to Orlik-Grzybowska. Analysis of diagnostic models in the deciduous dentition – measurements and indices.	F.W1., F.U6., F.U7., F.U18., G.U15.
	C2. Knowing normal occlusion in mixed dentition. Analysis of diagnostic models in mixed dentition – measurements and indices.	F.W1., F.U6., F.U18., G.U15.
	C3. Knowing normal occlusion in permanent dentition. Analysis of diagnostic models in permanent dentition – measurements and indices.	F.W1., F.U6., F.U18., G.U15.
	C4. Recognition of malocclusions in the frontal-orbital plane – evaluation of development of dental arches, measurements on diagnostic models.	F.W1., F.U6., F.U18., G.U15.
	C5. Recognition of malocclusions in the sagittal plane – evaluation of development of dental arches – measurements on diagnostic models.	F.W1., F.U6., F.U18., G.U15.
	C6. Recognition of malocclusions in the Frankfurt plane – evaluation of development of dental arches – measurements on diagnostic models.	F.W1., F.U6., F.U18., G.U15.
Exercises	C7. Recognition of dental anomalies— evaluation of development of dental arches – measurements on diagnostic models.	F. W1., F.W4., F.W18., F.U6., F.U7., F.U18., F.U23., G.U15.
	C8. Analysis of panoramic radiographs regarding recognition of dental anomalies in tooth morphology, number, position and time of eruption.	F. W1., F.W4., F.W18., F.U6., F.U7., F.U18., F.U23., G.U15.
	C9. Cephalometric radiographs used for diagnosis and orthodontic treatment. History of cephalometry, indications for a cephalometric examination, cephalometric analysis – according to Steiner, Schwartz, Segner and Hasund, Jarabak and McNamara, computer analysis. Cephalometric radiographs used for diagnosis and orthodontic treatment.	F.W1., F.W4., F.W18., F.U1., F.U2., F.U6., F.U7., F.U18.
	C10. Examination of face. Orthodontic photography – principles.	F.W1., F.U2., F.U3., F.U6., F.U18.
	C11. Functional examination. Rehabilitation of speech, swallowing and breathing. Elements of the functional examination, examination of masticatory muscles, examination of the TMJ function, reeduction of the stomatognatic system, myotherapy, rehabilitation of speech, breathing and swallowing.	C.W33., F.W1., F.W2., F.W12., F.W14., F.W19., C.U16., F.U1., F.U2., F.U3., F.U4., F.U6., F.U15., F.U21., G.U15.
	C12. Principles of orthodontic treatment including the type of malocclusion and patient's age.	C.W33., F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W19., F.W22., F.W23., C.U16., F.U1.,

	F.U2., F.U3., F.U4., F.U6., F.U7., F.U9., F.U13., F.U15., F.U18., F.U20., F.U21., F.U23., G.U20.
C13. Orthodontic materials.	F.W15., F.W17., F.U1., F.U6., F.U7., F.U15., F.U20.
C.14. Colloquium.	
C.15. Discussion on Colloquium and its correction.	
Exercises – 2 nd semester	
C1. Dentofacial deformities - primary and secondary palate cleft, ectodermal dysplasia.	F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W19., F.W22., F.W23., F.U1., F.U3., F.U4., F.U7., F.U9., F.U15., F.U18., F.U23., G.U15.
C2. Dentofacial deformities - Down syndrome, cleidocranial dysostosis, Goldenhar syndrome, Apert syndrome, Pierre-Robin syndrome, Crouzon syndrome.	F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W19., F.W22., F.W23., F.U1., F.U3., F.U4., F.U7., F.U9., F.U15., F.U18., F.U23., G.U15.
C3. Orthodontic appliances – introduction, instructional films.	F.W1., F.W2., F.W4., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20.
C4. Removable orthodontic appliances – part 1: types, construction, mechanical appliances used in early treatment, mechanical appliances – Schwartz's plate.	F.W1., F.W2., F.W4., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20.
C5. Removable orthodontic appliances – part 2: functional, removable orthodontic appliances: monoblock, Klammt, Stockfisch, Frankel and twin-block appliances. Construction bite – principles and management, planning of orthodontic appliances, schemas.	F.W1., F.W2., F.W4., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20.
C6. Orthodontic appliances: extraoral (head-gear, face mask), fixed thick-wire appliances: (Pendex, lip bumper, transpalatal arch, lingual arch, quad-helix, Hyrax).	F.W1., F.W2., F.W4., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20.
C7. Fixed thin-wire orthodontic appliances – elements of fixed appliances, instruments used for fixed appliances, phases of treatment.	F.W1., F.W2., F.W4., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20.
	F.W1., F.W2., F.W4.,

C8. Learning how to fill-in patients' records – electronic documentation, paper F.W14., F.W15., documentation, informed consent. F.W17., F.W18., F.W19., F.W22., F.W23.,F.U1., F.U2., F.U3., F.U4., F.U6., F.U7., F.U11., F.U13., F.U15., F.U18., F.U23., G.U26. C9. REPETITION C.W33., F.W1., F.W2., C10. Evaluation of practical skills in orthodontic diagnosis (diagnostic models, F.W4., F.W12., F.W14., photographs, radiological examination, orthodontic appliances) - so called F.W17., F.W18., "PINS" part 1. F.W19., F.W22., C.U16., F.U1., F.U2., F.U3., F.U4., F.U6., F.U7., F.U9., F.U12., F.U15., F.U18., F.U20., F.U21., F.U23. C11. Evaluation of practical skills in orthodontic diagnosis (diagnostic models, C.W33., F.W1., F.W2., F.W4., F.W12., F.W14., photographs, radiological examination, orthodontic appliances) – so called F.W17., F.W18., "PINS" part 2. F.W19., F.W22., C.U16., F.U1., F.U2., F.U3., F.U4., F.U6., F.U7., F.U9., F.U12., F.U15., F.U18., F.U20., F.U21., F.U23. C.W33., F.W1., F.W12., F.W14., F.W15., C12. Clinical exercises. Anamnesis and clinical examination, diagnosis of F.W18., F.W19., malocclusions. F.W22., F.W23., C.U16., F.U1., F.U2., F.U3., F.U4., F.U6., F.U7., F.U9., F.U11., F.U12., F.U13., F.U15., F.U18., F.U20., F.U21., F.U23., G.U15., G.U20., G.U26. C.W33., F.W1., F.W12., F.W14., F.W15., C13. Clinical exercises. Anamnesis and clinical examination, diagnosis of F.W18., F.W19., malocclusions. F.W22., F.W23., C.U16., F.U1., F.U2., F.U3., F.U4., F.U6., F.U7., F.U9., F.U11., F.U12., F.U13., F.U15., F.U18., F.U20., F.U21., F.U23., G.U15., G.U20., G.U26. C14. Colloquium. C15. Discussion and repetition of colloquium.

7. LITERATURE

Obligatory

- 1. Preclinical orthodontics. Zadurska M & Czochrowska E. Dział Wydawnictw Warszawskiego Uniwersytetu Medycznego 2016.
- 2. Handbook of orthodontics. 2nd edition. Cobourne M, DiBiase A, Elsevier 2015.
- 3. Zarys Ortodoncji Współczesnej pod red. Ireny Karłowskiej. PZWL 2016.
- 4. Contemporary Orthodontics 5th edition, Tom 1, chapters: 3, 4, 5, 6. Proffit WR, Fields HW, Sarver DM. Elsevier, 2009.
- 5. Materiały i techniki ortodontyczne pod red. Anny Komorowskiej. Polskie Towarzystwo Ortodontyczne, Lublin 2009.

Supplementary

- 1. Contemporary Orthodontics 5th edition, Tom 1, chapters: 1, 2, 7, 8. Proffit WR, Fields HW, Sarver DM. Elsevier, 2009.
- 2. Contemporary Orthodontics 5th edition, Tom 2. Proffit WR, Fields HW, Sarver DM. Elsevier, 2009.
- Wybrane choroby dziedziczne i wady rozwojowe w praktyce stomatologicznej pod red. Barbary Siemińskiej-Piekarczyk,
 Małgorzaty Zadurskiej. Med Tour Press International 2008.
 Orthodontic Forum.

8. VERIFYING THE EFFECT OF LEARNING

Code of the course effect of learning	Ways of verifying the effect of learning	Completion criterion
F.W1., F.W2., F.W4., F.W12., F.W14., F.W15., F.W17., F.W18., F.W19., F.W22., F.W23., F.U1., F.U2., F.U3., F.U4., F.U6., F.U7., F.U9.,	Credit for lectures – attendance obligatory, the knowledge delivered during lectures is required at the final colloquium. Credit for seminars in the 1th semester – attendance and preparation for a seminar is obligatory – oral examination at each of the seminars in case of a justified absence a written test from the content of a seminar is obligatory	Active participation in all seminars Written colloquium in the 1th semester – 20 multiple-choice questions (20 points), it is necessary to obtain a minimum of 12 points
F.U11., F.U12., F.U13., F.U15., F.U18., F.U19., F.U20., F.U21., F.U23., G.U15., G.U20., G.U26.	Credit for exercises is based on the attendance and the active participation, In case of a justified absence, attendance of the exercise at another time is obligatory until the end of the semester. The student is obliged to present at least one presentation on the given topic. The negative score from the exercises results in failure of the subject.	Written colloquium in the 2 nd semester - 30 multiple-choice questions (30 points), it is necessary to obtain a minimum of 18 points
	in case of a justified absence or a failing at the first attempt of the examination, passing of a written multiple-choice test of 30 questions (30 points) is obligatory – criteria for credit the same as at the first attempt In case of an unsuccessful examination, a committee examination can be organized only by a permission from the head of the department	

- **9. ADDITIONAL INFORMATION** (information essential for the course instructor that are not included in the other part of the course syllabus e.g. if the course is related to scientific research, detailed description of, information about the Science Club)
- 1. Lectures are posted on e-learning platform and present the latest advances in the field of orthodontics
- 2. Student reports to classes in protective clothes including changing of shoes and with ID including information: student, year, first name, surname. Bags must be placed on shelves in clinical rooms.

- 3. Non-compliance to safety regulations at work and oral hygiene is not allowed.
- 4. Please be on time to attend classes. Delay of more than 15 minutes will be treated as absence.
- 5. Using of mobile telephones is prohibited during classes and in clinical rooms.
- 6. The link to the department's website is: http://ortodoncja.wum.edu.pl
- 7. Coordinator of the 4th year EDD is: Dr hab. n. med. Ewa Czochrowska, eczochrowska@wum.edu.pl

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